NEVADA DIVISION OF ENVIRONMENTAL PROTECTION
FACT SHEET

(pursuant to NAC 445A.236)

Permittee Name: Nevada Cogeneration Associates
420 N. Nellis Boulevard
A3-117
Las Vegas, NV 89110

Permit Number: NEV90050

Locations: Nevada Cogeneration Associates #2 (NCA #2)
Black Mountain Cogeneration Plant, Clark County
Latitude: 36° 13' 28"N, Longitude: 114° 52' 34"W
Township 20S, Range 64E, Section 7

Drinking Water Protection Area / Wellhead Protection Area: The Nevada Cogeneration Associates (NCA) Black Mountain Cogeneration Plant is not located within the 6000' Drinking Water Protection Area (DWPA) of any public water supply well. The facility is not within an established Wellhead Protection Area (WHPA). The Black Mountain Cogeneration plant evaporation pond is double lined, and meets the recognized Nevada standards for a zero-discharge facility.

General: Nevada Cogeneration Associates (NCA) operates the Black Mountain (NCA #2) Cogeneration Plant in Clark County. The Black Mountain Facility is located approximately ten miles south-southeast of Interstate 15, along Pabco Road. The cogeneration plant is rated at 85 megawatts (MW) of electrical generating capacity. At the facility, natural gas fires three combustion turbines, and waste heat is recovered in a steam generator. The principal products supplied by the plant are electricity to Nevada Power Corporation and thermal energy (heat) to the Pabco gypsum wallboard (sheet rock) plant. Surplus thermal heat from the cogeneration turbines is used to calcine gypsum ore and dry wallboard product. The cogeneration plant provides the electrical demand of approximately 60,000 homes.

The Black Mountain Cogeneration Facility uses an 8-acre double-lined evaporation pond to contain all liquid wastes generated from the facility. Stormwater and sanitary wastes are handled separately. The evaporation pond is designed to evaporate 31.4 gallons per minute (gpm) (3.93 gpm/acre, based on net evaporation rate of 68.2 inches/year).The liquid waste stream from each plant is specified by design at 25.1 gpm and is comprised of inputs from cooling tower blowdown, boiler makeup water system spent regenerates, plant washdown water, and equipment drain sources. The pond is lined with 36-mil Hypalon® (primary) and 30-mil PVC (secondary) synthetic liner materials. Leakage from the primary liner is collected and routed to a leak detection sump, where the leakage flow rate is measured. The pond was originally designed with centrally located mister nozzles to increase the evaporation rate; however these sprays have not been installed. The maximum operating depth in the ponds is specified as 5 ft. in the center, and the minimum freeboard height is specified as 2 ft. The evaporation process concentrates the discharged salts (brine sludges), which are periodically removed for disposal to the Republic Apex Landfill.

In the past, the Black Mountain facility has provided dust suppression water from the evaporation

pond to neighboring mineral processing facilities. The dust suppression water has been used on haul roads and in mineral crushing equipment (water sprays). According to NCA, the Black Mountain facility provides dust control fluid to D. L. Denman Construction, with minor amounts intermittently provided to Pabco. With the 2008 renewal of this permit, use of water pumped from the evaporation ponds for dust control shall be discontinued, due to the high salt content of the pond water (average 139,700 mg/l Total Dissolved Solids). Wastewater from the plant itself prior to discharge to the evaporation pond contains less than 60,000 mg/l Total Dissolved Solids, and may be used for dust suppression purposes.

All process water for the Black Mountain Facility is supplied from three common supply wells located mid-way between the facility and its sister plant, NCA Garnet Valley Cogeneration plant, which is administered under permit NEV90049. The screened depth of the supply wells is reported as 600 feet below ground surface (bgs). The design supply rate of water to the Garnet Valley facility is 550 gpm. The bulk of the water supply is evaporated in the cooling towers and evaporation ponds. Approximately 100 gpm of raw water from the facility is chilled and exported to the neighboring wallboard plant as process make-up water.

Flow and Effluent Characteristics: During the period from July, 2002 through March, 2007, the Black Mountain facility reported the following monitoring and analytical results:

Parameter	Permit Limit	Average	Maximum	Minimum
Daily Flow to Evaporation Pond, MGD (Outfall 001)	0.249	0.041	0.064	0.029
Pond Leakage Rate (gallons/acre/day)	≤ 40	54.4	1303.4	0
Total Dissolved Solids (mg/l)	Monitor & Report	139682	339000	73600
pH (Standard Units)	Monitor & Report	8.97	9.64	8.36

DMR data indicated the Black Mountain evaporation pond had major leakage events in March 2004, April 2005, November2005, and October 2006. These leakage events contributed to the average pond leakage rate exceeding the permit limit of 40 gallons/acre/day. Nevada Cogeneration Associates undertook an aggressive leak repair program in October, 2006. Since the completion of leak repair, the facility has been in compliance with the permit limit.

Receiving Water Characteristics: The pond is designed to be a zero-discharge facility, and incorporates a leak-detected double-liner containment system. Water is supplied to the facility from supply wells offsite, located about five miles northwest of the plant site. The well logs for the well nearest the site (Pabco) do not record static water level; however, the well was drilled to a 310 ft. depth. Groundwater movement at the site is expected to be in a south-southeast direction towards the Las Vegas Wash and Lake Mead.

Proposed Effluent Limitations and Special Conditions:

Table 1: Plant Discharge Limitations

PARAMETER		DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS	
		30-Day Average	Daily Maximum	Measurement Frequency	Sample Type
Pond Inflow, MGD (Outfall 001)		Monitor & Report	0.249(1)	Continuous	Flow Meter
Wastewater Diverted for Dust Control, gallons per month (Outfall 002)		Monitor & Report		Continuous	Volumetric Determination
Leak Detection Sump Inspection (gal/day/acre)		Monitor, Evacuate, Calculate & Report (maximum allowable leakage is 40 gal/day/acre)		Monthly	Flow Meter
Pond Supernatant and Water Diverted for Dust Control, Each	TDS, mg/L	Monitor & Report		Quarterly	Composite(2)
	pH, S.U.	Monitor & Report		Quarterly	Composite(2)
	Metals, mg/L(3)	Monitor & Report		Semi-Annually (1st & 3rd Quarters)(4)	Composite(2)

(1). Pond inflow shall not exceed the evaporation capacity.
(2). A composite sample shall be obtained by combining equal volumes of liquid taken from each corner of the evaporation pond.
(3). Metals to be tested are Sb, As, Be, Cd, Cr, Cu, Pb, Hg, Ni, Se, Ag, Tl and Zn.
(4). Sampled in January and July of each year.

Schedule of Compliance: The Permittee shall implement and comply with the provisions of the schedule of compliance after approval by the Administrator, including in said implementation and compliance, any additions or modifications, which the Administrator may make in approving the schedule of compliance. The Permittee shall achieve compliance with all conditions of this permit upon issuance. Additionally, the Permittee shall submit the following items to the Division for review and approval

a. **By MMM DD, 2008**, the Permittee shall submit any updates to the Operations and Maintenance (O&M) Manual.

b. **By MMM DD, 2008,** the Permittee shall submit an updated list and map indicating the facilities being supplied dust control water from the Black Mountain facility.

c. **By MMM DD, 2008**, the Permittee shall submit, for review and approval, designs for the dust control water load-out station, and any associated appurtenances, for use of facility wastewater as dust palliative. The load-out facility must be upstream of the evaporation pond, and shall have no input of fluid pumped from the evaporation pond. Designs shall be submitted to:

Mr. Nadir Sous
Division of Environmental Protection
Bureau of Water Pollution Control - Las Vegas
2030 E. Flamingo Rd
Suite 230
Las Vegas, NV 89119-0837

d. **By MMM DD 2008,** the Permittee shall submit as-built drawings of the dust control water load-out station. As-Built drawings shall be submitted to Mr. Nadir Sous at the above address.

Rationale for Permit Requirements: The Division's rationale for the proposed monitoring conditions is as follows:

- *Flow*: Influent flow to the evaporation pond is monitored via flow meters. In addition, the volume of dust control water supplied from the pond is monitored. This ensures appropriate fluid level in the pond.

- *TDS*: The pond contents and the fluid disbursed for dust control purposes are sampled quarterly for Total Dissolved Solids (TDS). This parameter is monitored to assess the appropriateness of pond inflow fluid use for dust control, and to gain information on pond supernatant quality should a catastrophic leak in the liner system occur

- *pH*: The pond contents and the fluid disbursed for dust control purposes are sampled quarterly for pH. This parameter is monitored to assess the appropriateness of pond inflow fluid use for dust control, and to gain information on pond supernatant quality should a catastrophic leak in the liner system occur

- *Metals*: The pond contents and the fluid disbursed for dust control purposes are sampled semi-annually for thirteen priority pollutant metals (i.e., Sb, As, Be, Cd, Cr, Cu, Pb, Hg, Ni, Se, Ag, Tl and Zn). These parameters are monitored to assess the appropriateness of pond inflow fluid use for dust control, and to gain information on pond supernatant quality should a catastrophic leak in the liner system occur

- *Leak Detection Sump*: On a monthly basis, the pond sump is pumped and totalized. This will allow the Permittee and the Division to determine if excess leakage is present, and ensures that appropriate liner repairs are made on a timely basis.

Procedures for Public Comment: The Notice of the Division's intent to issue (renew) the zero-discharge permit to NCA authorizing the operation of the Black Mountain Facility evaporation pond, subject to the conditions contained within the permit is being sent to the **Las Vegas Review-Journal** for publication. The notice is being mailed to interested persons on our mailing list. Anyone wishing to comment on the proposed permit can do so in writing for a period of thirty (30) days following the date of publication of the public notice in the newspaper. The comment period

can be extended at the discretion of the Administrator. The deadline date and time by which all comments are to be submitted (via postmarked mail or time-stamped faxes, e-mails, or hand-delivered items) to the Division is **March 12, 2008 by 5:00 P.M.**

A public hearing on the proposed determination can be requested by the applicant, any affected State, any affected interstate agency, the Regional Administrator or any interested agency, person or group of persons.

The request must be filed within the comment period and must indicate the interest of the person filing the request and the reasons why a hearing is warranted.

Any public hearing determined by the Administrator to be held must be conducted in the geographical area of the proposed discharge or any other area the Administrator determines to be appropriate. All public hearings must be conducted in accordance with NAC 445A.238.

The final determination of the Administrator may be appealed to the State Environmental Commission pursuant to NRS 445A.605.

Proposed Determination: The Division has made the tentative determination to issue (renew) the proposed discharge permit NEV90050 for a period of five (5) years.

Prepared by: Janine O. Hartley
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Bureau of Water Pollution Control
August 2007